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Dear Rachael:

On behalf of the undersigned supporting organizations (listed on page 6), CEE appreciates the opportunity to provide comments on the Draft 1 Version 1.0 specification for ENERGY STAR qualified pre-rinse spray valves (PRSVs). The CEE Commercial Kitchens Committee (the Committee) and its Technology Assessment Working Group convened to review the draft Eligibility Criteria to qualify products as ENERGY STAR compliant. The Committee includes CEE-member energy-efficiency program managers as well as program managers from sponsoring water agencies. Many of those on the Committee promote efficient PRSVs through direct-install programs, rebates, education, and other strategies. The following comments summarize participants' reactions to and suggestions for the proposed PRSV ENERGY STAR specification.

1. Energy and Water Efficiency Programs Support an ENERGY STAR PRSV label

The Committee recognizes that efficient PRSVs offer an excellent opportunity to save water with equivalent cleaning performance to baseline models, while using a lower flow rate. Increased water efficiency correlates to a direct savings in energy by reducing the amount of water that needs to be heated. The combination of water and energy savings makes efficient pre-rinse spray valves a very attractive product from both a consumer and program perspective. The Committee welcomes a proven, national platform to promote efficient products and to educate consumers about their benefits. The Committee anticipates using the label and qualifying product list in their commercial programs. According to CEE's most recent national survey, approximately 64 percent of consumers recognize and understand the ENERGY STAR label. Regions of the country with active program support have even greater awareness levels, averaging 74 percent.

The Committee noted that existing programs promoting efficient PRSVs typically operate on a direct install basis, where programs purchase efficient PRSVs in bulk and install them at no cost to customers. Due to limited availability of products, programs often purchase and install only one model of PRSV. From the perspective of those who design and implement efficiency programs, an ENERGY STAR PRSV will help efficiency programs transition from a direct-install approach to a market-based approach (e.g., incentive programs), which can be much less expensive to administer.

Direct install programs have the potential for "snapback" when consumers looking to replace an efficient product are unequipped with the tools for choosing an efficient replacement. Incentive-based programs and the ENERGY STAR label could help shift the purchasing decisions from

program administrators to consumers by making it easier for consumers to identify efficient products on their own. Programs that succeed in helping consumers understand, value, and choose efficient products lead to lasting market change and persistent savings, the ultimate goal of efficiency programs. With consumers making the purchase decisions, manufacturers, retailers, and distributors would likely use the ENERGY STAR label to differentiate their efficient products – further leveraging program resources and perhaps driving an increase in product availability.

2. Pre-rinse Spray Valve Definition

Committee members noted that PRSVs are sometimes modified for greater throughput in pre-rinse operations. Specifically, in large operations (for example, hotel buffet kitchens) the unit's actuator clip is removed so that it is permanently on, it is mounted vertically to a rigid pipe, and then plumbed for on/off operation by a foot pedal. Functionally, this lets the operator have both hands free to manipulate the dish under the spray, may be faster, and results in reduced hand fatigue. If the definition were expanded to include this type of application, ENERGY STAR PRSVs would be an option for more types of facilities, likely resulting in greater energy and water savings. The Committee recommends revising the definition to reflect different configurations. For example, "Pre-rinse spray valves consist of a spray nozzle; a squeeze lever, pedal, or other actuator that controls the water flow; and a dish guard bumper."

3. Potential Exposure to the ENERGY STAR Program

The proposed qualifying criteria are very similar, if not identical, to the specifications being used by a number of programs around the country. Overall, existing PRSV programs report high levels of success with very low rates of customer dissatisfaction with efficient PRSVs. Where water pressure is controlled for, committee members report few customer complaints due to longer PRSV cleaning times, implying that any increase in cleaning time is within consumer tolerance levels. The largest cause of dissatisfaction has been due to installation of efficient PRSVs in facilities with water pressure significantly lower than the pressure used in the test procedure (60 psi). Given the considerable potential for customer dissatisfaction with low water pressure and the overwhelming interest in having this first explicitly energy and water ENERGY STAR label succeed, the Committee strongly advises EPA to consider further investigation of the impact of varying operating conditions on PRSV performance and, specifically, whether certain specification requirements, discussed below, could disadvantage efficient products relative to standard design models.

Cleanability. According to an evaluation of the California Urban Water Conservation Council's (CUWCC) Rinse & Save Program, PG&E's Food Service Technology Center (FSTC) found a difference in cleanability between standard and efficient PRSVs of 8 percent (19.1 to 24.9 seconds versus 21.0 to 26.5 seconds, respectively).[1] Per the test procedure, these tests were conducted at 60 psi with a water temperature of 120º F. (FSTC did not measure cleanability at varying pressures or temperature.) This difference was small enough for the CUWCC to conclude that washing effectiveness of efficient and standard spray valves is essentially equivalent.

[1] SBW Consulting, Inc. *Evaluation, Measurement & Verification Report for the CUWCC Pre-Rinse Spray Head Distribution Program*. Report No. 0401. May 3, 2004.

In contrast to the above data, the city of Waterloo, ON found that in-field cleaning times increased on average by 28 percent with the installation of efficient PRSVs, even when units were installed only in moderate pressure areas (i.e., pressures similar to the test procedure pressure).[2] It is unclear what the cause might be for the variation between the FSTC bench-test and Waterloo in-field results.

Water Pressure. A number of existing programs have experienced customer dissatisfaction with products that test at 1.6 gpm at 60 psi when used with either very low or very high water pressures. Several program evaluations supported this observation. According to the California program evaluation report, 5 of 19 metered sites had water pressure around 40 psi with one site as low as 33 psi. The Waterloo program evaluation states that low water pressure at a Wendy's combined with significantly lower flow rate of the new PRSV negatively affected the staff's ability to clean their lettuce-shredding equipment. Average pressure was only 31 psi. The same report found that high water pressure at several sites caused excessive and unacceptable splashing and over-spraying. Similar problems with pressure and PRSV performance have been cited by programs in Seattle and California, with some programs purposefully avoiding installing low-flow equipment in city areas known to have extreme water pressures. Other programs install a slightly higher flow (e.g., 1.8 – 2.0 gpm) unit in areas with known pressure problems.

Since ENERGY STAR will not likely be in a position to screen customers for water pressure, the Committee recommends that the EPA investigate water pressure variation nationally and the possibility of requiring testing at low and high pressures with specific performance criteria associated with those pressures or some similar requirement. The table below illustrates one potential approach for ensuring high performance (efficiency and cleanability) at varying pressures. Note that this is not a recommendation for actual specification levels; the relationship between pressure, flow rate, and cleanability are purely illustrative here and do not necessarily reflect testing results.

Test Pressure	**Max. Flow Rate**	**Cleanability** (max)
Low – 40 psi	1.6 gpm	32 sec per plate
Med – 60 psi	1.8 gpm	26 sec per plate
High – 80 psi	2.0 gpm	21 sec per plate

If EPA does not want to require testing at varying pressures, the Committee identified several alternatives that could reduce the possibility of customer dissatisfaction. One option would be to specify a slightly higher flow rate. The PRSV program in Seattle found that units testing at 1.8 gpm at 60 psi function satisfactorily at 40 psi. Further bench testing could show that such a slight relaxation in the flow requirement could be enough to minimize performance problems. Another option for ENERGY STAR would be to include messaging in the PRSV label marketing to advise consumers that performance could be negatively impacted by extreme water pressures (i.e., high or low). This alternative, however, could leave consumers confused about their options for increasing efficiency if they don't know what their water pressure is or conclude that their only alternative to an ENERGY STAR unit is a high-flow unit rather than a moderate-flow (1.8

[2] Veritec Consulting Inc. *Region of Waterloo Pre-Rinse Spray Valve Pilot Study: Final Report.* January 2005.

to 2.0 gpm) unit. Thus, we recommend either requiring flow and cleanability rates at typical pressure levels or relaxing the flow rate requirement.

Water Temperature. The Committee noted that water temperature is also likely to affect the cleaning performance of spray valves and that hot water temperatures differ across facilities, with many facilities having temperatures much lower than that used in the test procedure (120º F). The California program evaluation report found that 11 of 19 metered sites had water temperatures below 120º Fahrenheit, with an overall range of 87º to 135º F. The Committee questions whether temperatures lower than 120º F might somehow give standard models an advantage over low-flow units. If so, it may be prudent to require performance testing at different temperatures or include consumer recommendations on operating conditions achieve acceptable cleaning performance.

4. Product Availability at Draft Performance Level

It is our understanding that ENERGY STAR's historical practice has been to establish specifications so that approximately 25% of available products can qualify for the label. The Committee would appreciate knowing what performance level EPA identified as encompassing the top 25% of available PRSV models. If the proposed specification does not represent 25% of the market, the Committee would like to know the logic that was used in choosing the criteria.

While the Committee was unable to compile a complete set of published data on the national market for PRSVs, we surveyed programs as well as individuals knowledgeable of the PRSV market to try to determine how many distinct[3] PRSV models are currently available. The Committee and CEE staff identified 8 distinct PRSV products currently available on the market. Of these, 5 are likely to qualify for the proposed ENERGY STAR criteria. These findings are summarized below.

Manufacturer	Distinct Models	Potential Qualifiers
Chicago Faucet	1	
ECOLAB	1	1*
Encore	1	1
Fisher Manufacturing	2	1
Niagara Conservation	1	1
T&S Brass and Bronze	3	1

*Meets flow rate criteria, no cleanability rating yet.

5. Proposed Tier 2 Criteria

EPA has proposed Tier 2 criteria in order to take into account future improvements in technology and recognize the most efficient models on the market. While supportive of the idea of making the ENERGY STAR label requirements more stringent as the market advances, the Committee is concerned that defining a Tier 2 at this time may not be appropriate, even if the implementation date is not yet determined. Based on the following concerns, the Committee recommends the announcement of a single performance tier at this time. The announcement of the possibility of

[3] A unit from a single manufacturer that is marketed under one or more brand names would be considered a distinct model.

enhancing the requirements at a future date under specified circumstances (such as market acceptance, new technological changes, etc.) could achieve a similar purpose without unduly constraining potential stakeholders.

First, the Committee believes it is unclear how the ENERGY STAR label will impact the PRSV market. By setting future criteria now, ENERGY STAR could be missing an opportunity to increase the criteria even further. Setting a target now that is just 12.5% more stringent than the initial criteria could discourage product innovation that could yield even more efficient products in the future. Secondly, given the Committee's concerns about in-field performance at low water pressures, we believe it would be important to use any feedback on customer satisfaction with Tier 1 to inform any future criteria. Finally, it is unclear to the Committee whether the incremental water and energy savings gained by moving to the proposed Tier 2 levels would justify the potential confusion in the market resulting from changing the criteria.

Although the Committee does not support defining Tier 2 at this time, it did want to comment on the criteria that have been proposed. Since PRSV "performance efficiency" is a function of both flow rate (at a given pressure) and cleanability, raising the performance criteria could be done either by decreasing both or by holding one variable constant and decreasing the other. While EPA is proposing to decrease flow rate, it appears programs have chosen to vary cleanability. For example, the Summary of PRSV Program Requirements, below, indicates that as flow rate appears to be converging on a 1.6 gpm (at 60 psi), the cleanability varies significantly across programs. One committee member noted that it can be easier to market a higher performance product based on cleanability ("Gets the job done 25% faster") than to market a lower flow product ("Same performance using 10% less water"). Should EPA consider revising the PRSV criteria at some point in the future, the Committee recommends exploring whether it would be most effective to make cleanability more stringent while holding flow rate constant.

Summary of PRSV Program Requirements

Organization	Max Flow rate (gpm)	Pressure (psi)	Cleanability (sec/plate), max.	Test Procedure	Notes
EPA – Tier 1	1.6	60	26	ASTM F2324-03	Proposed; Effective 8/1/05
EPA – Tier 2	1.4	60	26	ASTM F2324-03	Proposed; Effective TBD
CUWCC	1.6 +/-0.1	60 +/-2	21	ASTM F2324-03	
CA Standard	1.6	60	30	ASTM F2324-03	Approved; Effective 1/1/06
FEMP Recommended	2.0	60	26	ASTM F2324-03	
FEMP Best Available	1.6	60	22	ASTM F2324-03	
Waterloo	1.6	60	26	ASTM F2324-03	
Puget Sound Energy	1.6 – 2.6	60	26	ASTM F2324-03	
KeySpan	1.6	60	26	ASTM F2324-03	
WI-FOE	1.6	60	26	ASTM F2324-03	
Seattle PUD	1.8	60	26	none specified	

6. Promoting Water Savings through ENERGY STAR

Committee participants are very interested in promoting the water savings of pre-rinse spray valves and are interested in learning about EPA's plans for marketing this new product and how water savings will be promoted. Should the PRSV criteria be finalized, the Committee looks forward to helping shape and support these marketing and promotional efforts.

Once again, the Committee would like to thank the Environmental Protection Agency for the opportunity to comment on the draft ENERGY STAR PRSV specification. These comments are endorsed by the Supporting Organizations on the next page. Please contact CEE Program Manager, Ted Jones, at 617-589-3949, ext. 230 with any questions about these comments.

Sincerely,

Marc Hoffman
Executive Director

Supporting Organizations:

Cape Light Compact
City of Toronto
Eugene Water and Electric Board
GasNetworks:
- Bay State Gas
- Berkshire Gas
- New England Gas (MA)
- KeySpan Energy Delivery New England
- Northern Utilities
- NSTAR Gas
- Unitil

New York State Energy Research and Development Authority (NYSERDA)
Pacific Gas and Electric Company
Puget Sound Energy
Seattle City Light
Seattle Public Utilities
Vermont Gas Systems, Inc.
Wisconsin Division of Administration (Focus on Energy Program)